EPSON

PRODUCT INFORMATION GUIDE

UPDATE FOR SD PRODUCTS

5/03

This package provides a POS printer product section to be added to the *EPSON System Device Product Information Guide*. The table of contents of this section is listed below.

EPSON TM-U220

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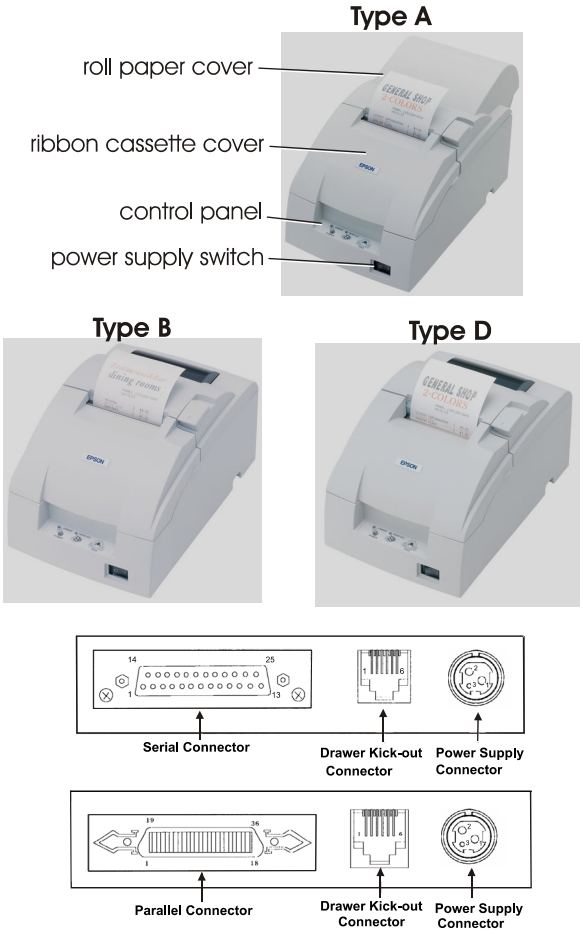


Accessories

Ribbon types

Part number	Color	Life (with continuous print at 77° F)
ERC-38 (P)	Purple	4 million characters
ERC-38 (B)	Black	3 million characters
ERC-38 (B/R)	Black/red	1.5 million / 0.75 million characters (black/red)

Option

Option	Model	Part number
Wall hanging bracket	WH-10	C32C845010

Interfaces

Standard RS-232 serial or IEEE 1284 parallel

Options EPSON universal interface (UB) boards and Connect-It™ * modules

* To find out more about our line of Connect-It interfaces, contact your EPSON sales representative

Environmental Conditions

Temperature Operating 41 to 113° F
Standby 14 to 122° F

Humidity 10 to 90% RH

Printer Specifications

Print method Serial impact dot matrix (single and two-color)

Head wires 9-pin serial configuration

Print direction Bidirectional with logic seeking

Print speed 4.7 lps (40 columns, 16 cpi)
6 lps (30 columns, 16 cpi)

Paper widths 3" {76 mm} (for Types A, B, and D)
2.76" {69.5 mm} (for Types B and D)
2.28" {57.5 mm} (for Types B and D)

Fonts 7 × 9 or 9 × 9

Characters 95 alphanumeric
48 international
128 × 12 tables

Buffer size Receive: 40 bytes or 4KB (by DIP switch)
NV user: 8KB
NV image: 128KB

Dimensions Type A: 6.3 × 11.26 × 6.2" (W × D × H)
Type B, D: 6.3 × 9.76 × 5.45" (W × D × H)

Weight Type A: 5.95 lb
Type B: 5.51 lb
Type D: 5.07 lb

Characters per line

Size	Paper Widths	Dot Spacing	CPL	CPI
7 x 9	76 mm 69.5 mm 57.5 mm	3 half dots	40 36 30	16
9 x 9	76 mm 69.5 mm 57.5 mm	3 half dots	33 30 25	13.3
7 x 9	76 mm 69.5 mm 57.5 mm	2 half dots	40 36 30	17.8
9 x 9	76 mm 69.5 mm 57.5 mm	2 half dots	40 36 30	14.5

Reliability

Life
Mechanism: 7,500,000 lines
Print head: 150 million characters
Autocutter: 800,000 cuts (Type A and B only)

Electrical Characteristics

Power supply AC adaptor C

Supply voltage +24 VDC

Current consumption (except during drawer kick)
Operating 31 W mean
Standby 2.2 W mean

DIP Switches/Memory Switches

Type A

Serial I/F

DIP Switch 1

No.	Function	On	Off
1	Data reception error	Ignored	**Print "?"**
2	Receive buffer size	40 bytes	**4KB**
3	Handshaking	XON/XOFF	**DTR/DSR**
4	Word length	7 bits	**8 bits**
5	Parity check	Yes	**No**
6	Parity selection	Even	**Odd**
7	Transmission speed	4800 bps	**9600 bps**
8	Busy condition	Receive buffer full	**Offline** **Receive buffer full**

DIP Switch 2

No.	Function	On	Off
1	Characters per line (cpl)	42/35	**40/33**
2	Reserved (autocutter)	**Enabled**	Disabled
3	Undefined	—	**—**
4	Serial settings	By memory switch	**By DIP switch**
5	Undefined	—	**—**
6	Reserved (Flash rewrite)	Enabled	**Disabled**
7	Pin 6 reset signal	Used	**Not used**
8	Pin 25 reset signal	Used	**Not used**

Parallel I/F

DIP Switch 1

No.	Function	On	Off
1	Auto line feed	Enabled	**Disabled**
2	Receive buffer size	40 bytes	**4KB**
3-7	Undefined	—	**—**
8	Busy condition	Receive buffer full	**Offline** **Receive buffer full**

DIP Switch 2

No.	Function	On	Off
1	Characters per line (cpl)	42/35	**40/33**
2	Reserved (autocutter)	**Enabled**	Disabled
3-5	Undefined	—	**—**
6	Reserved (Flash rewrite)	Enabled	**Disabled**
7	Undefined	—	**—**
8	Pin 31 reset signal	**Used**	Not used

Bold = default setting
Cpl = characters per line on 76 mm paper

Types B and D

Serial I/F

DIP Switch 1

No.	Function	On	Off
1	Data reception error	Ignored	**Print "?"**
2	Receive buffer size	40 bytes	**4KB**
3	Handshaking	XON/XOFF	**DTR/DSR**
4	Word length	7 bits	**8 bits**
5	Parity check	Yes	**No**
6	Parity selection	Even	**Odd**
7	Transmission speed	4800 bps	**9600 bps**
8	Busy condition	Receive buffer full	**Offline** **Receive buffer full**

DIP Switch 2

No.	Function	On	Off
1	Characters per line (cpl)	42/35	**40/33**
2	Reserved (autocutter)	**Enabled**	Disabled
3	Pin 6 reset signal	Used	**Not used**
4	Pin 25 reset signal	Used	**Not used**
5	Undefined	—	**—**
6	Reserved (Flash rewrite)	Enabled	**Disabled**
7	Undefined	—	**—**
8	Serial settings	By memory switch	**By DIP switch**

Parallel I/F

DIP Switch 1

No.	Function	On	Off
1	Auto line feed	Enabled	**Disabled**
2	Receive buffer size	40 bytes	**4KB**
3-7	Undefined	—	**—**
8	Busy condition	Receive buffer full	**Offline** **Receive buffer full**

DIP Switch 2

No.	Function	On	Off
1	Characters per line (cpl)	42/35	**40/33**
2	Reserved (autocutter)	Enabled*	Disabled*
3	Undefined	—	**—**
4	Pin 32 reset	**Used**	Not used
5	Undefined	—	**—**
6	Reserved (Flash rewrite)	Enabled	**Disabled**
7-8	Undefined	—	**—**

Bold = default setting
* Type B default = on; Type D default = off
Cpl = characters per line on 76 mm paper

Memory Switch MSW 2

Bit	Function	48 (Off)	49 (On)
1-2	Undefined	**Fixed to Off**	—
3	Character code (for Simplified Chinese)	**GB18030**	GB2312
4-8	Undefined	**—**	—

Memory Switch MSW 8

Bit	Function	48 (Off)	49 (On)
1-4	Undefined	**—**	—
5	Cover open status selection	**Paper end**	Cover open
6	Undefined	**—**	—
7	Receive buffer BUSY goes off when remaining bytes exceed	**256 bytes**	138 bytes
8	Printer cover open during operation	**Automatically recovers**	Can recover on command

Customized value (Set with GS (E Command)

Function	Value	
Paper width	57.5 mm 76 mm	69.5 mm —

Serial I/F Communications Settings

Function	Value	
Baud rate	1200 bps 4800 bps 19200 bps	2400 bps 9600 bps —
Parity	None Even	Odd —
Handshaking	DSR/DTR	XON/XOFF
Data length	7 bits	8 bits

Safety

EMI FCC/ICES-003 Class A

Safety standards UL 609501950
CSA C22.2 No. 95060950-00

(Tested using the EPSON AC adaptor C.)

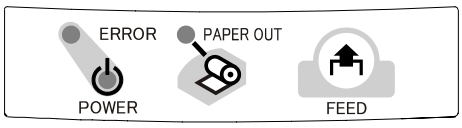
Environmental

Temperature Operating 32 – 122° F
Storage 14 – 122° F

Humidity 10 – 90% (no condensation)

(Storage conditions are without paper and ribbon cassette.)

Control Panel



LEDs

POWER
On when power is on.

ERROR
On when printer is offline. Off when printer is online. Flashes during an error.

PAPER OUT
On when the printer is out, or nearly out, of paper. Flashes during the printer self-test

Buttons

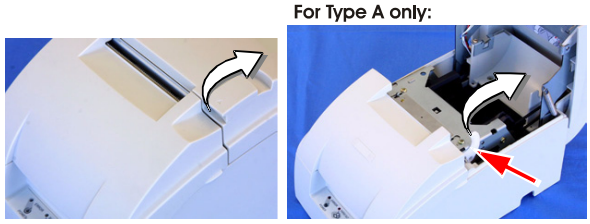
FEED
This button feeds roll paper or starts a self-test.

POWER
Turns on printer power.

Loading Paper

Note: Only use roll paper that meets specifications.
Do not use rolls with paper ends glued to the core.
Be careful not to touch the manual cutter. It is sharp.

1. Turn on the printer.
2. Using the tab shown below, open the paper roll cover.
3. For Type A only, open the unit using the unit open lever shown at the right below.

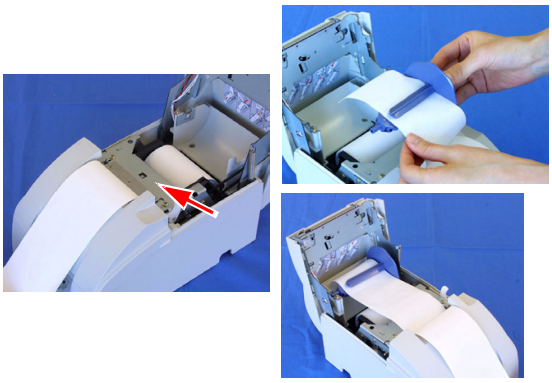


4. Remove the used paper core, if there is one.
For Type A only, remove the paper take-up spool, and then open the unit and remove any used paper core.
5. Using scissors, cut the leading edge of the paper straight, as shown at the top left in the illustration below.
6. Insert the paper roll as shown on the right below.

Note: If you are using 2-ply paper, be sure that the top and bottom layers are aligned at the paper exit.

7. For Type A only, pull out enough paper to reach the bottom front of the printer; then close the unit as shown at the left below.
8. For Type A only, insert the end of the bottom layer of paper (the journal paper) into the paper take-up spool, and insert the spool back into the printer. Be sure the paper is aligned with the spool's flange.

For Type A only:



9. For Type A only, feed the paper using the FEED button so that the spool takes up the paper.
10. Close the paper roll cover; then tear off the roll paper.

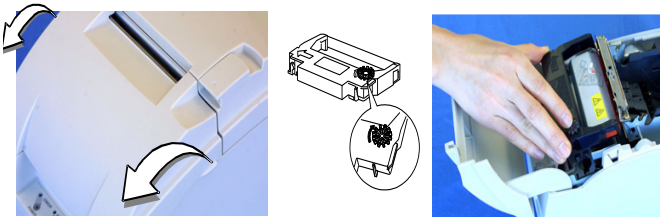
Note: Do not open the roll paper cover during printing or paper feeding.
Be sure to cut roll paper with the manual cutter after each paper feeding.

Replacing the Ribbon Cassette

CAUTION: The print head becomes very hot during printing. Let it cool before replacing the ribbon.
Never turn the ribbon cassette knob in the opposite direction to the arrow on the cassette.

Note: Use the EPSON ERC-38 ribbon cassette.

1. Open the ribbon cover using the tabs on each side of the cover, as shown on the left below.



2. To remove an old ribbon, lift the left side of the cassette first and then the whole cassette.
3. Turn the knob of the new ribbon cassette two or three times, as shown in the center above.
4. Insert the ribbon as shown at the right above. Be sure the ribbon is between the print head and platen, and push the ribbon cassette down until it clicks.
5. Again turn the knob two or three times to take up slack.

Testing the Printer

Note: Load paper, and close the paper roll cover.

1. Be sure the printer is off and printer cover closed properly.
2. Hold down the FEED button, and turn on the printer. (You can also start the self-test by sending the command **GS (A**.
3. The self-test prints the printer settings and then prints the following. (The PAPER OUT light flashes.)

   ```
   If you want to continue SELF-TEST printing, please
   press the FEED button.
   ```

4. Press the FEED button to continue printing. The printer prints a pattern using the built-in character set.
5. The printer prints "`*** completed ***`" when the test ends. (If the printer has an autocutter, it cuts the paper.) The printer can receive data as soon as it completes the self-test.

Note: To pause the self-test, press the **FEED** button. Press **FEED** again to continue the self-test.

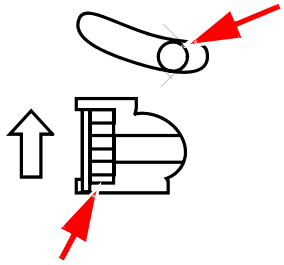
Removing a Paper Jam

CAUTION: The print head becomes very hot during printing. Let it cool before clearing a jam.

1. Open the paper roll cover using the tab, as shown at the top of the previous page.
2. For a Type A printer, remove the take-up spool, and open the unit.
3. Remove the jammed paper, put the roll paper back in the printer, and close the cover. Do not pull jammed paper forcefully or use tools.
4. to clear an autocutter jam, follow the steps below.

Clearing the Autocutter (Types A and B)

1. Turn the power off, open the roll paper cover, and remove the jammed paper.
2. Use a pen or small screwdriver to turn the knob on the autocutter in the direction of the arrow until ❍ appears in the window.

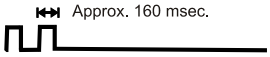
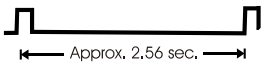
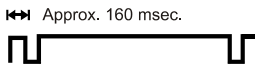


3. Close the roll paper cover.

Differences between the TM-U300, TM-U200, and TM-U220

Specification	TM-U300 (Type A, B, C, D)	TM-U200 (Type A, B, D)	TM-U220 (Type A, B, D)
Print speed	3.5 lines/second (at 40 columns, 16 cpi)	3.5 lines/second (at 40 columns, 16 cpi)	4.7 lines/second (at 40 columns, 16 cpi)
Paper feed speed	25 lines/second	25 lines/second	30 lines/ second
Character tables	Alphanumeric 95, international 32, extended 126 x 7	Alphanumeric 95, international 32, extended 128 x 8	Alphanumeric 95, international 48, extended 128 x 12
Paper loading	Paper roll holding shaft	Semi automatic loading	Drop in loading
Paper near-end sensor	Yes	Option	Configured option
Cover open detector	Yes	No	Yes
Paper width	76 mm	76 mm	76 mm, 69.5 mm, or 57.5 (B and D only)
Number of copies	Original + 2 copies (at 77° F) Original + 1 copy (at all temperatures)	A and B: original + 1 copy; D: original + 2 copies	All models: original + 1 copy
Autocutter (Type A, B only)	Full cut or partial cut set by command	Partial cut default; full cut set by command	Partial/full cut set by command
Auto take-up unit	Type A, C	Type A	Type A
Print area	76 mm paper: Width: 63.34 mm (200 dots x 400 positions) Left margin: 6 mm Right margin: 6.5 mm (approx.)	76 mm paper: Width: 63.34 mm (200 dots x 400 positions) Left margin: 5.9 mm Right margin: 6.76 mm	76 mm paper: Width: 63.34 mm (200 dots x 400 positions) Left margin: 6.8 mm Right margin: 5.8 mm 69.5 mm paper: Width: 57 mm (180 dots x 360 positions) Left margin: 6.7 mm Right margin: 5.8 mm 57.5 mm paper: Width: 47.5 mm (150 dots x 300 positions) Left margin: 4.2 mm Right margin: 5.8 mm
Space from autocut to print start: Space from manual cut to print start:	36 mm Type A, B: 26 mm; Type C, D: 28 mm	27 mm 20.2 mm	27 mm Type D: 22.1 mm; Type A, B: 34.9 mm
Receive buffer	Alphanumeric: 1KB/40 bytes Multilingual: 512 bytes/40 bytes	Alphanumeric: 1KB/40 bytes Multilingual: 512 bytes/40 bytes	Alphanumeric: 4KB/40 bytes Multilingual: 4KB/40 bytes
NV bit image memory	Alphanumeric: none Multilingual: none	Alphanumeric: none (128KB, Micros only) Multilingual: none	Alphanumeric: 128KB Multilingual: 128KB
NV user memory	Alphanumeric: none Multilingual: none	Alphanumeric: none Multilingual: none	Alphanumeric: 8KB Multilingual: 8KB
Power supply	PA-6509 or PB-6509 (North America)	PB-6509 (North America)	AC Adapter C — Low-cost universal power supply for impact dot matrix printer supplied in box.
Dimensions (W x D x H)	Type A: 170 x 288 x 183 mm {6.7 x 11.3 x 7.2"} Type B: 170 x 253 x 148 mm {6.7 x 10 x 5.8"} Type C: 158 x 295 x 145 mm {6.2 x 11.6 x 5.7"} Type D: 158 x 235 x 125 mm {6.2 x 9.3 x 4.9"}	Type A: 160 x 295 x 160 mm {6.3 x 11.6 x 6.3"} Type B: 160 x 248 x 150 mm {6.3 x 9.8 x 5.9"} Type D: 160 x 248 x 133 mm {6.3 x 9.8 x 5.2"}	Type A: 160 x 286 x 157.5 mm {6.3 x 11.3 x 6.2"} Type B: 160 x 248 x 138.5 mm {6.3 x 9.8 x 5.5"} Type D: 160 x 248 x 138.5 mm {6.3 x 9.8 x 5.5"}
Installation	Horizontally with a 15° slant, maximum. Type B, D: Vertically on wall using WH-10 bracket.	Horizontally with a 15° slant, maximum.	Horizontally with a 15° slant, maximum. Optional IR tray also can be used. Type B, D: Vertically on wall using WH-10 bracket.
Buzzer	None	None	Printer also can be used with annunciator interface.

Error LED codes

LED pattern	Solution
Head temperature error or paper roll cover open error (auto recovery selected) 	Head temperature error: Clears automatically when print head cools. If error repeats, check ambient temperature. If problem continues, contact your servicer.
	Paper roll cover open error (auto recovery selected): Recovers automatically when you close the cover.
Roll paper cover open error (recovery by command selected) 	Recovers when you close the cover and send **DLE ENQ 1** or **DLE ENQ 2**. If problem continues, contact your servicer.
Home position detection error (mechanical error) 	Check for a paper jam, paper dust, or foreign matter on the sensor. Once you have corrected the problem, recovers when you send **DLE ENQ 2.** If problem continues, contact your servicer.
Autocutter error 	For Type A and Type B printers only: Check for a paper jam in the autocutter. Check for paper dust or foreign particles on the cutter blade. Error recovers when you send the code **DLE ENQ 2**. If problem continues, contact your servicer.
R/W error in memory or gate array 	Unplug printer and plug it back in. If problem continues, contact your servicer.
CPU execution error 	Unplug printer and plug it back in. If problem continues, contact your servicer.
High voltage error 	Try replacing the power supply. If problem continues, contact your servicer.
Low voltage error 	Try replacing the power supply. If problem continues, contact your servicer.
Print head temperature abnormality error 	Unplug printer and plug it back in. If problem continues, contact your servicer.

Related Documentation

EPSON TM-U220 Service Manual

EPSON TM-U220 Technical Reference Guide

EPSON TM-U220 Parts Price List

EPSON TM-U220 Operator's Manual

EPSON TM-U220 Specification